**Key\_to\_data\_files**

**Final-submitted\_v3, visit 2 and visit3.**

1. id : each subject is assigned to a number
2. fnam1 and fnam2 : There are two repeated measurements fnam 1 is for run one and fnam2 is for run 2.
3. frqRange : 0 is for CAF range, 1 is for EHF range.
4. Sex : 1 male, 2 female
5. Ears : 0 left ear, 1 right ear
6. Exposure: 2 exposed to noise, 1 non-exposed to noise.
7. NESI\_1 :NESI score at baseline.
8. ILO\_SIG\_0.7 - ILO\_SIG\_5.65 : ILO quickscreen CAF range signal amplitude (section 3.4.2)
9. ILO\_NOISE\_0.7 - ILO\_NOISE\_5.65 : ILO quickscreen CAF range noise (section 3.4.2)
10. ILO\_0.707 - ILO\_5.65 : ILO quickscreen CAF range signal and noise (SNR) (section 3.4.2)
11. HPF\_Sig\_0.7\_kHz - HPF\_Sig\_16.0\_kHz : Analysis data in 1/2octave band centred on 8 k Hz/TEOAE signal amplitude at EHF using high-pass filtered click (HPF) (section 3.4.3.1).
12. Noise\_0.7HPF\_L\_kHz - Noise\_16.0HPF\_L\_kHz: TEOAE noise at EHF using high-pass filtered click (HPF) (section 3.4.3.1).
13. SNR\_0.7HPF\_L\_kHz - SNR\_16.0HPF\_H\_kHz: TEOAE SNR at EHF using high-pass filtered click (HPF) (section 3.4.3.1).
14. TBSig\_0.6\_kHz - TBSig\_14.1\_kHz: TEOAE signal amplitude at EHF using tone burst centred at 10 kHz (TB) (section 3.4.3.1).
15. TBNoise\_0.6\_kHz - TBNoise\_14.1\_kHz: TEOAE NOISE at EHF using tone burst centred at 10 kHz (TB) (section 3.4.3.1).
16. TBSNR\_0.6\_kHz - TBSNR\_14.1\_kHz: TEOAE SNR at EHF using tone burst centred at 10 kHz (TB) (section 3.4.3.1).
17. LF05 - HF18 : Pure tone audiometry for CAF and EHF.
18. SigPN70\_L\_1.0\_kHz - SigPN70\_H\_14.1\_kHz: DPOAEs signal amplitude at EHF using stimulus level 70, 70 dB SPL.
19. Noise2SD70\_L\_1.0\_kHz - Noise2SD70\_H\_14.1\_kHz: DPOAEs noise at EHF using stimulus level 70, 70 dB SPL.
20. SNR\_2SD70\_L\_1.0\_kHz - SNR\_2SD70\_H\_14.1\_kHz: DPOAEs SNR at EHF using stimulus level 70, 70 dB SPL.
21. SigPN65\_L\_1.0\_kHz - SigPN65\_H\_14.1\_kHz: DPOAEs signal amplitude at EHF using stimulus level 65, 55 dB SPL.
22. Noise2SD65\_L\_1.0\_kHz - Noise2SD65\_H\_14.1\_kHz: DPOAEs noise at EHF using stimulus level 65,55 dB SPL.
23. SNR\_2SD65\_L\_1.0\_kHz - SNR\_2SD65\_H\_14.1\_kHz: DPOAEs SNR at EHF using stimulus level 65,55 dB SPL.
24. TB\_Sig\_Avg.base: average of the signal amplitude for all the EHF.
25. TB\_Noise\_Avg.base: average of the noise for all the EHF.
26. TB\_SNR\_Avg.base: average of the SNR for all the EHF.
27. TESig: average of the signal amplitude for all the EHF.
28. Noise\_HiFq\_Avg\_TE.Base: average of the NOISE for all the EHF.
29. TEsnr: average of the SNR for all the EHF.
30. Sig\_dp70: average of the signal amplitude for all the EHF.
31. Sig\_dp65: average of the signal amplitude for all the EHF.
32. SNR\_dp70: average of the SNR for all the EHF.
33. SNR\_dp65: average of the SNR for all the EHF.
34. HTL\_BASE: averaged across 0.5, 1, 2, 3, 4, 6, and 8 kHz For CAF/ EHF-HTLs averaged across 10, 11.2, 12.5, 14, and 16 kHz.

**Study2\_ch5\_Data**

1. SPOAEs: spontaneous otoacoustic emissions.
2. Sig\_ILO\_0.7 - Sig\_\_ILO\_5.65: ILO quickscreen CAF range signal amplitude (section 3.4.2)
3. Noise\_ILO\_0.7 - Noise\_ILO\_5.65: ILO quickscreen CAF range noise (section 3.4.2)
4. SNR\_ILO\_0.7 - SNR\_ILO\_5.6569: ILO quickscreen CAF range SNR (section 3.4.2)
5. SigPN70\_L\_1.0\_kHz - SigPN70\_H\_14.1\_kHz: DPOAEs signal amplitude.
6. Noise2SD70\_L\_1.0\_kHz - Noise2SD70\_H\_14.1\_kHz: DPOAEs noise
7. SNR\_2SD70\_L\_1.0\_kHz - SNR\_2SD70\_H\_14.1\_kHz:DPOAEs SNR
8. DE65\_def\_Sig\_0.7kHz - DE65\_def\_Sig\_16kHz: TEOAEs were also evoked using default

clicks (with rectangular waveform) to provide descriptive information at CAF, though these

measurements were not used in subsequent hypothesis tests. The measurements were repeated a second time for both HPF and default clicks, and recording was continued for approximately 70 sec per replicate test.

stimulus level 65 dB.

1. DE65\_def\_noise\_0.7kH - DE65\_def\_noise\_16kH: noise
2. DE65\_def\_SNR\_0.7kHZ - DE65\_def\_SNR\_16kHZ: SNR
3. DE75\_def\_Sig\_0.7kHzz - DE75\_def\_Signal\_16kHz: TEOAEs were also evoked using default

clicks (with rectangular waveform) to provide descriptive information at CAF, though these

measurements were not used in subsequent hypothesis tests. The measurements were repeated a second time for both HPF and default clicks, and recording was continued for approximately 70 stimulus level 75 dB.

1. DE75\_def\_Noise\_0.7kHzz - DE75\_def\_Noise\_16kHz: Noise
2. DE75\_def\_SNR\_0.7kHzZ - DE75\_def\_SNR\_16kHz: SNR
3. DE65\_hpf\_Sig\_0.7khz - DE65\_hpf\_Sig\_16khz: TEOAEs were also evoked using (HPF) to provide descriptive information at CAF, though these

measurements were not used in subsequent hypothesis tests. The measurements were repeated a second time for both HPF and default clicks, and recording was continued for approximately 70 stimulus level 65 dB.

1. DE65\_hpf\_noise\_0.7khz - DE65\_hpf\_noise\_16khz:NOISE
2. DE65\_hpf\_SNR\_0.7khz - DE65\_hpf\_SNR\_16khz:SNR
3. DE75\_hpf\_SIGN\_0.7khZ - DE75\_hpf\_SIGN\_16khZ: TEOAEs were also evoked using (HPF) to provide descriptive information at CAF, though these measurements were not used in subsequent hypothesis tests. The measurements were repeated a second time for both HPF and default clicks, and recording was continued for approximately 70 stimulus level 75 dB.
4. DE75\_hpf\_noise\_0.7khZ - DE75\_hpf\_noise\_16khZ: NOISE
5. DE75\_hpf\_SNR\_0.7khZ - DE75\_hpf\_SNR\_16khZ:SNR
6. FFT\_AMP: Here is a function that calculates the FFT amplitude in the range from 10 to 30 spectral periodicity units (1/ln[Hz]).
7. R\_Coarse: waveform correlation coefficient for the coarse structure
8. R\_Fine: waveform correlation coefficient for the fine structure
9. AVE\_CONV\_PTA: averaged across 0.5, 1, 2, 3, 4, 6, and 8 kHz For CAF-HTL
10. AVE\_EHF\_PTA: EHF-HTLs averaged across 10, 11.2, 12.5, 14, and 16 kHz
11. LOWDPOAES\_SIGN\_AVE:average for CAF-DPOAEs amplitude
12. LOWDPOAES\_NOISE\_AVE: average for CAF-DPOAEs noise
13. LOWDPOAES\_SNR\_AVE: average for CAF-DPOAEs SNR
14. HighDPOAES\_signal\_AVE: average for EHF-DPOAEs amplitude
15. HighDPOAES\_noise\_AVE: average for EHF-DPOAEs noise
16. HighDPOAES\_SNR\_AVE: average for EHF-DPOAEs SNR
17. Sig\_DE65LowFq\_def\_\_Avg\_TE: average of the amplitude for all the CAF stimulus level 65.
18. NOISE\_DE65LowFq\_def\_\_Avg\_TE: average of the noise for all the CAF stimulus level 65.
19. SNR\_DE65LowFq\_def\_\_Avg\_TE: average of the SNR for all the CAF stimulus level 65.
20. SIGNAL\_DE75LowFq\_def\_\_Avg\_TE: average of the amplitude for all the CAF stimulus level 75.
21. NOISE\_DE75LowFq\_def\_\_Avg\_TE: average of the noise for all the CAF stimulus level 75.
22. SNR\_DE75LowFq\_def\_\_Avg\_TE: average of the SNR for all the CAF stimulus level 75.
23. DE\_Signal\_65HF\_AVER: average of the amplitude for all the EHF stimulus level 65 (section 5.6.3).
24. DE\_NOISE\_65HF\_AVER: average of the Noise for all the EHF stimulus level 65 (section 5.6.3).
25. DE\_snr\_65HF\_AVER: average of the SNR for all the EHF stimulus level 65 (section 5.6.3).
26. DE\_sIGNAL\_75HF\_AVER: average of the Noise for all the EHF stimulus level 75 (section 5.6.3).
27. DE\_NOISE\_75HF\_AVER: average of the Noise for all the EHF stimulus level 75 (section 5.6.3).
28. DE\_SNR\_75HF\_AVER: average of the SNR for all the EHF stimulus level 75 (section 5.6.3).
29. Num\_Pks: the number of peaks at EHF (8-16 kHz)
30. Sum\_Pks: sum of peaks
31. Mean\_Pks: mean of peaks
32. EEHF\_8\_16: EHF-HTLs averaged across 8, 10, 11.2, 12.5, 14, and 16 kHz.
33. EEHF\_10\_16: EHF-HTLs averaged across 10, 11.2, 12.5, 14, and 16 kHz.

**Chapter6\_alldata**

1. rdnl75hpf\_Sig\_0.6\_kHz - rdnl75hpf\_Sig\_13.3\_kHz: TEOAEs amplitude using RDNL method and 75 stimulus level and HPF.
2. rdnl75hpf\_Noise\_0.6\_kHz - rdnl75hpf\_Noise\_13.3\_kHz: TEOAEs noise using RDNL method and 75 stimulus level and HPF.
3. rdnl75hpf\_SNR\_0.6\_kHz - rdnl75hpf\_SNR\_13.3\_kHz: TEOAEs SNR using RDNL method and 75 stimulus level and HPF. To optimise the SNR involving the calculation of three

SNR values (section 6.9.1.2).

1. rdnl65hpf\_Sig\_0.6\_kHz – rdnl65hpf\_Sig\_13.3\_kHz: TEOAEs amplitude using RDNL method and 65 stimulus level and HPF.
2. rdnl65hpf\_Noise\_0.6\_kHz – rdnl65hpf\_Noise\_13.3\_kHz: TEOAEs noise using RDNL method and 65 stimulus level and HPF.
3. rdnl65hpf\_SNR\_0.6\_kHz – rdnl65hpf\_SNR\_13.3\_kHz: TEOAEs SNR using RDNL method and 65 stimulus level and HPF. To optimise the SNR involving the calculation of three

SNR values (section 6.9.1.2).

1. DE75hpf\_Sig\_0.6\_kHz - DE75hpf\_Sig\_13.3\_kHz: TEOAEs amplitude using DE method and 75 stimulus level and HPF.
2. DE75hpf\_Noise\_0.6\_kHz - DE75hpf\_Noise\_13.3\_kHz: TEOAEs noise using DE method and 75 stimulus level and HPF.
3. DE75hpf\_SNR\_0.6\_kHz - DE75hpf\_SNR\_13.3\_kHz: TEOAEs SNR using DE method and 75 stimulus level and HPF. To optimise the SNR involving the calculation of three

SNR values (section 6.9.1.2).

1. DE65hpf\_Sig\_0.6\_kHz – rdnl65hpf\_Sig\_13.3\_kHz: TEOAEs amplitude using DE method and 65 stimulus level and HPF.
2. DE65hpf\_Noise\_0.6\_kHz – DE65hpf\_Noise\_13.3\_kHz: TEOAEs noise using DE method and 65 stimulus level and HPF.
3. DE65hpf\_SNR\_0.6\_kHz – DE65hpf\_SNR\_13.3\_kHz: TEOAEs SNR using DE method and 65 stimulus level and HPF. To optimise the SNR involving the calculation of three

SNR values (section 6.9.1.2).

1. rdnl75def\_Sig\_0.6\_kHz - rdnl75def\_Sig\_13.3\_kHz: TEOAEs amplitude using RDNL method and 75 stimulus level and deF.
2. rdnl75def\_Noise\_0.6\_kHz - rdnl75def\_Noise\_13.3\_kHz: TEOAEs noise using RDNL method and 75 stimulus level and deF.
3. rdnl75def\_SNR\_0.6\_kHz - rdnl75def\_SNR\_13.3\_kHz: TEOAEs SNR using RDNL method and 75 stimulus level and deF. To optimise the SNR involving the calculation of three

SNR values (section 6.9.1.2).

1. rdnl65def\_Sig\_0.6\_kHz – rdnl65def\_Sig\_13.3\_kHz: TEOAEs amplitude using RDNL method and 65 stimulus level and deF.
2. rdnl65def\_Noise\_0.6\_kHz – rdnl65def\_Noise\_13.3\_kHz: TEOAEs noise using RDNL method and 65 stimulus level and deF.
3. rdnl65def\_SNR\_0.6\_kHz – rdnl65def\_SNR\_13.3\_kHz: TEOAEs SNR using RDNL method and 65 stimulus level and deF. To optimise the SNR involving the calculation of three

SNR values (section 6.9.1.2).

1. DE75def\_Sig\_0.6\_kHz - DE75def\_Sig\_13.3\_kHz: TEOAEs amplitude using DE method and 75 stimulus level and deF.
2. DE75def\_Noise\_0.6\_kHz - DE75def\_Noise\_13.3\_kHz: TEOAEs noise using DE method and 65 stimulus level and deF.
3. DE75def\_SNR\_0.6\_kHz - DE75def\_SNR\_13.3\_kHz: TEOAEs SNR using DE method and 75 stimulus level and deF. To optimise the SNR involving the calculation of three

SNR values (section 6.9.1.2).

1. DE65def\_Sig\_0.6\_kHz – rdnl65def\_Sig\_13.3\_kHz: TEOAEs amplitude using DE method and 65 stimulus level and deF.
2. DE65def\_Noise\_0.6\_kHz – DE65def\_Noise\_13.3\_kHz: TEOAEs noise using DE method and 65 stimulus level and deF.
3. DE65def\_SNR\_0.6\_kHz – DE65def\_SNR\_13.3\_kHz: TEOAEs SNR using DE method and 65 stimulus level and deF. To optimise the SNR involving the calculation of three

SNR values (section 6.9.1.2).